

USSR

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Acc. Nr: AP0036820 *m*

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii, 1970, Nr 1, pp. 70-75

THE CAPACITY OF MACROPHAGES TO PROVOKE
THE ANTIBODY SYNTHESIS IN THE LYMPHOCYTE CULTURE
IN VIVO

Morgunov, I. N.; Orgel', M. Ya.; Grutman, M. I.

The authors studied the role of macrophages of peritoneal exudate of rats in induction of formation of antibodies against sheep erythrocytes or to diphtheritic toxoid under conditions of diffusion chambers present in the irradiated recipients. A conclusion was drawn that marked primary and secondary response in the lymphocyte culture in vivo required macrophage treatment of the antigen. When only the antigen was added to the lymphocyte culture in vivo, the antibody production proved to be less than on addition of macrophages which came in contact with the antigens before.

D.N.

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REEL/FRA

19721737 *6*

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UDC 621.396.967:551.501.81

TSKHAKAYA, K. G., SHCHUPYATSKIY, A. B., MORGUNOV, S. P., and
MINERVIN, V. Ye.

"Measurements of Signal Depolarization by Meteorological Forms in
Bistatic Reception"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 360-365 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10031)

Translation: The application of bistatic reception to radar inves-
tigation of meteorological forms is considered. A method is de-
scribed for experimentally investigating the signal parameters at
various dispersion angles. The measurements were conducted with
two radio relay stations separated by 14 km. The technique of
synchronizing both stations, of the frequency agreement of the
separated transmitter and receiver, and of the coincidence of the
space investigated by both stations, is given. Three illustra-
tions, bibliography of one. N. S.

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1/2 050 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--GROWTH OF METALLIC FILMS IN CONDENSATION FROM AN ATOMIC BEAM
IRRADIATED WITH ELECTRONS -U-
AUTHOR--(04)--POSTNIKOV, V.S., ZOLOTUKHIN, I.V., MORGUNOV, V.N., YEVLEV,
V.M.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 441-442
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--EPITAXIAL GROWTH, METAL FILM, METAL VAPOR DEPOSITION, GAS
IONIZATION, ELECTRON BEAM, GOLD, SILVER, ALUMINUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1822 STEP NO--UR/0126/70/029/002/0441/0442
CIRC ACCESSION NO--AP0129190
UNCLASSIFIED

2/2 050

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129190

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF IONIZED METAL ATOMS ON THE EPITAXIAL GROWTH OF FILMS CONDENSED FROM THE GAS PHASE WAS STUDIED BY IRRADIATING EVAPORATED ATOMIC BEAMS OF AU, AG, AND AL FROM THE SIDE WITH AN ELECTRON BEAM, SO AS TO CREATE A PROPORTION OF IONIZED PARTICLES PRIOR TO DEPOSITION. THE ELECTRON IRRADIATION GREATLY PROMOTED THE EPITAXIAL GROWTH OF THE METALLIC FILMS ON ROCK SALT, THE IONIZED PARTICLES HAVING A FAVOURABLE EFFECT ON COALESCENCE AND CONTINUITY.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SOME CLINICO PATHOGENETIC CORRELATIONS IN VIRAL HEPATITIS AND OTHER
DISEASE OF THE LIVER -U-
AUTHOR-(03)-FARBER, N.A., KIRZHNER, L.S., MORGUNOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 50-54
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEPATITIS, BLOOD CIRCULATION, BIOPSY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1431

STEP NO--UR/0504/70/042/004/0050/0054

CIRC ACCESSION NO--AP0109491

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 35 PATIENTS WITH DISEASES OF THE LIVER (VIRAL HEPATITIS 10, CHRONIC HEPATITIS 11, LIVER CIRRHOSIS 8 AND OBSTRUCTION PANCREAS DUE TO MALIGNANT NEWGROWTHS 6) WERE SUBJECTED TO COMPLEX EXAMINATION WITH THE EMPLOYMENT OF CLINICO BIOCHEMICAL, HEPATORHODOGRAPHIC AND HISTO MORPHOLOGICAL (INTRAVITAL PUNCTURE BIOPSY OF THE LIVER) METHODS. THE TECHNIQUES OF THE VARIATIONAL STATISTICS WERE USED TO REVEAL THE DEGREE OF CORRELATION BETWEEN THE INDICES OF DISTURBED INTRAHEPATIC BLOOD CIRCULATION, BIOCHEMICAL AND STRUCTURAL CHANGES IN THE LIVER. IT WAS ESTABLISHED THAT THE INDICES OF HEPATOGRAPHY SERVE AS THE MOST ACCURATE INDICATORS OF FIBROSIS IN THE LIVER. FACILITY: KLINICHESKIY OTDEL INSTITUTA VIRUSOLOGII IM. D. I. IVANOVSKOGO AMN SSR AND GORODSKAYA KLINICHESKAYA INFEDTSIONNAYA BOL'NITSA NO 82, MOSCOW.

UNCLASSIFIED

USSR

UDC 632.95

MOLOCHNIKOV, V. V., MOCHALOV, V. I., and MORGUNOVA, A. P.

"Procedure for Determining Some Chlorine-Containing Pesticides in Milk and Dairy Products by the Gas Chromatography Method"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i mesh sredi (Transactions of the Second All-Union Conference on the Study of Pesticide Residues and Prevention of Their Contamination of Food Products, Fodder and the External Environment), Tallinn, 1971, pp 81-84 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N441 by T. A. Belyayeva)

Translation: Preparations are extracted from the investigated sample with organic solvents (CHCl_3 -acetone) and the extract undergoes purification on a column with silica gel ASK [expansion unknown] and analysis on a gas chromatograph with an electron capture detector. The columns used have 3% SE-30 on chromosorb W (80-100 mesh) or 2% QF-1 on chromosorb W. Solid carriers are silanized. Column temperature 190° (QF-1) or 200° (SE-30), injection temperature respectively 200° or 210° , detector temperature 180 - 185° or 190 - 195° . Flow rate of carrier gas (H_2) 30 ml/min (QF-1) or 100 ml/min (SE-30).

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REACTION OF METHYLCYCLOSILAZANES WITH CARBOXYLIC ACIDS -U-
AUTHOR--(03)-ZHINKIN, D.YA., MORGUNOVA, M.M., SOBOLEVSKIY, M.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSCH. KHIM. 1970, 40(4), 809-12
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CYCLIC GROUP, ORGANOSILICON COMPOUND, AMINE DERIVATIVE,
AMMONIA, METHACRYLIC ACID, ETHER, EXOTHERMIC REACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1373 STEP NO--UR/0079/70/040/004/0809/0812
CIRC ACCESSION NO--AP0128773
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128773
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TREATING CYCLO-(R SUB2 SIN01 SUBX WITH ORG. ACIDS IN CALCD. AMT. RESULTS IN AN EXOTHERMIC REACTION WITH EVOLUTION OF NH SUB3, COMPLETED IN 3 HR AT 60-70DEGREES, TO YIELD THE DIACYLOXYSILAZANES LISTED BELOW. THUS, HEXAMETHYLCYCLOTRISILAZANE AND ACDH IN INDICATED AMOUNTS GAVE: (1:1), DIACETOXYHEXAMETHYLTRISILAZANE (I), B SUB15 1380-40DEGREES, 0 PRIME20 1.0156 N PRIME20 SUBD 1.4370; (1:2) SAME PRODUCT; (1:3) THE SAME PRODUCT ALONG WITH ME SUB2 SI(OAC) SUB2 AND DIACETOXYTETRAMETHYLDISILAZANE (II), B SUB15 109-10DEGREES, 1.0274, 1.4265; (1:6) ME SUB2 SI(OAC) SUB2. SIMILAR REACTION BUT WITH 2 MOLES ETCO SUB2 H GAVE DIPROPIONOXYHEXAMETHYLTRISILAZANE, B SUB10 124-5DEGREES, 0.9962, 1.4370; SIMILARLY, 2 MOLES C SUB5 H SUB11 CO SUB2 H GAVE DICAPROXYHEXAMETHYLTRISILAZANE, B SUB15 163-5DEGREES, 0.9564, 1.4396; OCTAMETHYLCYCLOTETRASILAZANE AND 2 MOLES ACDH GAVE ME SUB2 SO(OAC) SUB2, I, II, AND DIACETOXYOCTAMETHYLTETRASILAZANE, B SUB14 159-61DEGREES, 1.0104, 1.4425. (ME SUB2 SINH) SUB3 AND NH SUB4 OAC IN 3 HR AT 50-5DEGREES GAVE NH SUB3 AND 85PERCENT I IDENTICAL WITH THE ABOVE; SIMILAR REACTION WITH METHACRYLIC ACID, RUN BEST IN ET SUB2 O 1 HR AT 40DEGREES, GAVE AMINOISOBUTYRIC ACID AND 24PERCENT BIS(METHACRYLOXY)HEXAMETHYLTRISILAZANE, B SUB4-5 63DEGREES, 0.9892, 1.4545; SIMILAR REACTION BUT WITH (ME SUB2 SINH) SUB4 GAVE 31PERCENT BIS(METHACRYLOXY)TETRAMETHYLDISILAZANE, B SUB18 96-8DEGREES, 1.0011, 1.4405.

UNCLASSIFIED

172 011 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—REACTION OF HEXAMETHYLDISILAZANE WITH BISPHENOLS -U-
AUTHOR—(03)—MIKHAYLOVA, A.N., MORGUNOVA, M.M., ZHINKIN, D.YA.
COUNTRY OF INFO—USSR
SOURCE—ZH. OBSHCH. KHIM. 1970, 40(3), 613-15
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—AMMONIA, ORGANOSILICON COMPOUND, PHENOL, ORGANIC NITROGEN
COMPOUND, ORGANIC SYNTHESIS
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0890 STEP NO—UR/0079/70/040/003/0613/0615
CIRC ACCESSION NO—AP0124553
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAPID HEATING OF DIHYDROXY AROM.

COMPDS. WITH 25PERCENT EXCESS (ME SUB3 SI) SUB2 NH TO 130DEGREES AND
KEEPING TO ELIMINATE NH SUB3 GAVE AFTER 4-10 HR REACTION:

2,2,BIS(4,(TRIMETHYLSILOXY)PHENYL)PROPANE, 95PERCENT, B SUB1.5-2

173DEGREES, N PRIME20 SUBD 1.5230, D PRIME20 0.9971; 2,2,BIS(4,

(TRIMETHYLSILOXY),3,METHYLPHENYL)PROPANE, 92.5PERCENT, B SUB2-3

192DEGREES, 1.5208, 0.9946;

1,1,BIS(4,(TRIMETHYLSILOXY)PEHNYL)CYCLOPENTANE, 80PERCENT, B SUB2-3

208DEGREES, M. 20-1DEGREES;

1,1,BIS(4,(TRIMETHYLSILOXY)PHENYL)CYCLOHEXANE, 83.5PERCENT, B SUB2-3

205DEGREES, 1.5317, 1.0141; 1,1,BIS(4,(TRIMETHYLSILOXY),3,

METHYLPHENYL)CYCLOHEXANE, 94.3PERCENT, B SUB2-3 215DEGREES,-,-; 4,4

PRIME,BIS(4,(TRIMETHYLSILOXY)BIPHENYL, 89.5PERCENT, B SUB2-3 174DEGREES, M.

59-61DEGREES.

UNCLASSIFIED

USSR

UDC:669.28:539.434

GORONKOVA, A. D. and MORGUNOVA, N. N., Central Scientific Research Institute for Ferrous Metallurgy

"Long-Term Strength of Molybdenum Alloys under Cyclical Heating"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1974, pp 18-22

Abstract: The influence of temperature and holding time at the maximum temperature of the cycle on the long-term strength of molybdenum alloys was studied. Both TSM-2A low alloy and TSM-3 two-phase alloy with carbide hardening were studied. Sheet specimens 1 mm thick were used for the tests. The specimens were tested at 1000-2300° C with constant holding at t_{\max} of 5 sec and t_{\max} of 1250, 1500 and 1750° C with holding times of 1-50 sec at t_{\max} . The minimum temperature of each cycle was constant, 40° C. It was found that the long-term strength of molybdenum alloys under cyclical temperature changes was significantly lower than the long-term at constant temperature. The temperature interval of reduction of long-term strength for TSM-2A is 1500-2300° C, for TSM-3 it is 1000-1900° C. The critical holding time at the maximum temperature

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GORONKOVA, A. D., and MORGUNOVA, N. N., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1974, pp 18-22

of the cycle is 50 sec for both alloys. Apparently, the reduction in long-term strength of a solid-solution alloy such as TSM-2A results from the cyclical thermal stresses and relaxation conditions. The long-term strength of a two-phase alloy with carbide hardening may be significantly influenced by internal structural stresses arising upon thermal cycling.

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Mechanical Properties

USSR

UDC 669.28'784'296:621.17:621.785.72

KAZAKOVA, N. I., MORGUNOVA, N. N., and KANTOR, M. M., Central Scientific Research Institute for Ferrous Metals, imeni A. A. Baykov

"Influence of Aging on the Temperature Dependence of the Mechanical Properties of Alloys in the System Mo-C-Cr"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1974, pp 22-28

Abstract: The study mentioned in the title was performed using two-phase Mo-C-Zr alloys containing carbon and zirconium in equal quantities of 0.25 at.% and 0.45 at.% (TSM-3 and TSM-5). The processes of aging were studied using the method of measurement of hardness and resistivity, as well as the method of transmission electron microscopy. After hardening, the main difference in the structure of the two alloys is that TSM-5 contains more sectors with large Mo₂C particles on the boundaries and particularly within the grains. After aging, beginning at 1200° C, disperse particles of the new phase begin to appear within the grains. After tempering at 1700-1800° C, the nature of the second phase segregations changes. The plate-shaped segregations are replaced by circular segregations 0.5-1.0 μ in diameter. The structural changes which occur influence the strength and hardness characteristics of the alloys. The temperature dependences of mechanical properties correlate with these structural changes. The extreme of the properties (maximum strength and minimum ductility as well as minimum resistivity) is determined by the

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KAZAKOVA, N. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1974, pp 22-28

aging process. Dispersion hardening is manifested more sharply, the higher the quantity of carbon and zirconium in the alloy. Dispersion hardening is most strongly manifested in TSM-5 in the recrystallized state at 1400° C, and is not observed in the deformed state. Heat treatment (aging) before testing reduces or completely eliminates the dispersion hardening effect characteristics for recrystallized metal. The aging process, determining the form of the temperature dependence of mechanical properties, occurs in Mo-Zr-C and Mo-C alloys in the 900-1800° C interval, finding its maximum at 1600° C. When loads are applied, the temperature maximum of dispersion hardening drops to 1400° C.

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USSR

UDC: 669.28-849.620.178.2

SAVITSKIY, Ye. M., MORGUNOVA, N. N., BURKHANOV, G. S., KATAYEV, R. S., Moscow

"Influence of Iron-Group Metals on the Structure and Mechanical Properties of Vacuum-Melted Molybdenum"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 145-149.

Abstract: The ductility of molybdenum can be increased by increasing the purity of the initial raw material, by deep purification to remove interstitial impurities, and by alloying with thermodynamically active elements and rhenium. Recently, the influence of metals of group VIII on the ductility of molybdenum has been extensively studied. This work studies the influence of iron, cobalt and nickel on the structure and technological ductility of vacuum-melted molybdenum. It is found that alloying with iron-group metals has a modifying influence on the structure, facilitating an increase in the solubility of carbon, the formation of a developed substructure and more even distribution of molybdenum carbides through the volume of the metal, increasing the technological ductility and reducing the cold-shortness threshold. Iron has the most effective influence on increasing ductility, cobalt has the least. Nickel occupies an intermediate position in this respect. Alloying

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Savitskiy, Ye. M., Morgunova, N. N., Burkhanov, G. S., Katayev, R. S.,
Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 145-149.

of molybdenum with iron-group metals increases the recrystallization temperature of the molybdenum. The temperature of the beginning of recrystallization of molybdenum alloys with 0.1% Fe, Co or Ni falls in the 1000-1100° C interval (degree of deformation over 90%). Increasing the annealing temperature of alloys of molybdenum with iron, cobalt and nickel facilitates an increase in ductility and a decrease in strength and hardness by relieving internal stresses. The maximum ductility is achieved after annealing at the recrystallization level -- 1100° C.

USSR

UDC 669.28.001.5

GULYAYEV, A. P., ~~MORGUNOVA~~, N. N., MALKHASYAN, N. M., MOSCOW

"Shock Viscosity and Brittleness Threshold of Molybdenum"

Kiev Problemy prochnosti, No. 8, Aug 71, pp 70-73

Abstract: The characteristics of the breakdown of molybdenum and the effect of geometric factors on this process are studied. It is noted that in addition to internal factors such as composition and structure, the brittleness threshold may also depend on external factors such as the cross section of the sample and the sharpness of a cut, and that there has been insufficient data characterizing the effect of external factors. The object of the study was the alloy TsM-2A (Zr -- 0.1%, Ti -- 0.13%, C -- 0.0037%, and the remainder Mo) in the shape of a bar of diameter 16 mm. The tests were conducted on metal deformed by rolling at 1200°C with a degree of deformation of 70% and recrystallized at an annealing temperature after deformation of 1500°C for 1 hr. Samples of cross section 10 × 10 mm were made from the rod with a cut of depth 2 mm and radii 1.0, 0.5, 0.25 and 0.1 mm. The brittleness threshold as determined on the basis of the shock viscosity for recrystallized molybdenum is higher than

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USSR

GULYAYEV, A. P., et al, Problemy prochnosti, No. 8, Aug 71, pp 70-73

deformed molybdenum (400-480 and 100-220°C, respectively). An increase in the sharpness of the cut did not change the temperature for the transition of molybdenum into the brittle state. Breakdowns occur across the sample in deformed molybdenum in the brittle state but in the transition temperature region a portion of the samples began to tear and another portion was bent. The fraction of the bent portion of the sample increased with an increase in temperature. The sharpness of the cut did not effect the relationship of the bent and broken parts of the cross section. The specific work expended on breakdown of wires was determined and it decreased with a drop in temperature and became close to zero at the lower brittleness threshold.

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USSR

UDC 669.27.28.017

MORGUNOVA, N. N., KLYPIN, B. A., and LASTOCHKIN, R. R.

"Influence of Carbon on the Ductility of Molybdenum"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 63-67

Translation: The influence of 0.02-0.29% C on the transition temperature from the plastic state to the brittle state is studied in bars of deformed and recrystallized molybdenum. As the carbon content is increased, the transition temperature of the deformed molybdenum remains practically unchanged, while the transition temperature of recrystallized molybdenum increases. The relationship is demonstrated between a change in transition temperature and the microstructure of the molybdenum. In deformed molybdenum with various carbon contents, the carbides produced are of identical size and distributed evenly, and in recrystallized molybdenum the carbides become larger with increasing carbon content and form a network on the grain boundaries. 3 figures; 1 table.

1/1

UDC:669.27.28.017

USSR

KLYPIN, B. A., and KORGUNOVA, N. N.

"Temperature Dependence of Mechanical Properties of Certain Alloys of Molybdenum and Tungsten"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 67-71

Translation: Temperature dependences of the mechanical properties of a number of alloys based on molybdenum and tungsten are constructed in the 20-2500°C interval by tests in extension at high deformation rates. The differing nature of the dependence in the three intervals of homologous temperatures (low temperature, intermediate and high temperature) is demonstrated, and the influence of alloying on these dependences is analyzed. For alloys hardened by alloying with a solid solution, the temperature dependences of the properties are similar and differ only in the level of the properties. For alloys with increased carbon content, these dependences have certain peculiarities. The relationship of the high temperature break on the curve $\log \sigma_{0.2} - t$ and the recrystallization temperature of the alloy is demonstrated. 2 figures; 2 tables; 8 biblio. refs.

1/1

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USSR

UDC: 51:330.115

MORKELYUNAS, A. I.

"Axiomatic Definition of Some Group Decisions"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1971, 11, No 1, pp 159-172 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V762)

Translation: Two rules for group decisions are axiomatically defined. Both the axioms 1-5 which define the first rule, and axioms 1, 2, 3, 4, 5, 6 which define the second rule are independent. Let G be the group profile, and let R_0 be a set of individual profiles with strict preferences. For $G \subset R_0$, group decisions by both rules coincide, and group ordering in the sense of preference is determined as follows. Let u_i^j be a number equal to the number of alternatives for which the alternative a_i in the individual profile $R_i \in G$ is more preferable. Then the group ordering of alternatives a_i coincides with the natural order of the num-

bers, $\sum_{R_i \in G} u_i^j$. Author's abstract.

1/1

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USSR

UDC 51:330.115

~~MORKELYUNAS, A. I.~~

"One Rule for a Group Decision"

Lit. Mat. Sb. [Lithuanian Mathematics Collection], Vol 10, No 4, 1970, pp 745-764, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V486 by the author).

Translation: A rule is described which is a generalization of group ordering using the simple majority rule, as well as a generalization of group selection of the alternatives dominating the majority.

USSR

UDC 621.793.6:669.292:620.198

POKHMURSKIY, V. I., TOLSTOVA, S. V., and MOKROVA, A. M., Physico-Mechanical Institute, Academy of Sciences Ukrainian SSR, L'vov, and the Tula Pedagogical Institute

"Effect of a Steel's Chemical Composition on Structure of Vanadized Layers"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 16 19

Abstract: Low-, medium-, and high-carbon steels and stainless steels were vanadium coated from which it was found that Fe and V form a continuous series of substitutional solid solutions and the thickness of the diffusion layer was 10-18 microns for the carbon steels, 22-25 microns in steel Kh17N2, 70 microns in Kh18N10T, and 200 microns in steel 2Kh13. The microhardness of the diffusion layer was hardest for the carbon steels, ranging from 1100 to 2800 while steels Kh17N2, Kh18N10T, and 2Kh13 had values of 2000, 800-300, and 200 respectively. The microhardness of steel Kh17N2 with the vanadium coating was lower than that of the base metal and no carbide zone was found. This was explained by the increased concentration of carbide-forming elements which bonded the carbon into carbides as a result of which an alpha-solid solution of 1/2

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USSR

POKHURSKIY, V. I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 16-19

Cr and V in Fe is formed on the surface with disseminated carbides. From this study it was evident that the growth rate of the carbide phase, its depth, hardness and structure of the near-surface zones are affected by the carbon concentration and diffusion rate into alloys with a different chemical composition. Ine figure, one table, three bibliographic references.

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USSR

MORKVENAS, R.; PRAGARAUSKAS, H. (Vilnius State University; Institute of Physics and Mathematics, Lithuanian Academy of Sciences)

"Variation in the Problem of Optimal Stopping in a Game"

Vilnius, Litovskiy Matematicheskii Sbornik; Vol XII, No. 3, 1972; pp 107-11

Abstract: Let (Ω, \mathcal{F}, P) be a probability space. Let $\{\mathcal{F}_n, n=0,1,\dots\}$ be a non-decreasing family of σ -subalgebras of \mathcal{F} and x_n, φ_n be \mathcal{F}_n -measurable functions. The process x_n may be stopped by the first player at a moment τ if $\varphi_n > 0$ and by the second one if $\varphi_n < 0$. The second player gets from the first one the payoff x_n if the process is stopped at the moment n .

Suppose that $E(\sup \{x_n\}) < \infty$. Then we prove that there exists the value of the "bounded" process W_n^N , the optimal "bounded" strategies σ_n^N, τ_n^N and it is almost certain that $\lim_{N \rightarrow \infty} W_n^N = W_n$, where W_n is the value of the "unbounded" process.

1/1

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USSR

UDC: 539.142.3

BELOV, Yu. V., KLEYMAN, Yu. L., MORKOVIN, N. V., PAVLENKO, V. A., Special Design Office of Analytical Instrument Making, Academy of Sciences of the USSR

"A Nuclear Magnetic Resonance Spectrometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331302, Division G, filed 11 Jan 71, published 7 Mar 72, p 129

Translation: This Author's Certificate introduces a nuclear magnetic resonance spectrometer which contains an electromagnet, a system of external proton stabilization and a system of internal stabilization of resonance conditions, a transceiver with phase detector, a nuclear magnetic resonance signal indicator, a registration device, a voltage-to-frequency converter, a field modulator, a double resonance device and a nuclear magnetic resonance signal phase regulator. As a distinguishing feature of the patent, the universality of the instrument is extended and productivity is increased by adding a summing amplifier for controlling the voltage-to-frequency converter from the registration device and the nuclear magnetic resonance signal

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USSR

BELOV, Yu. V., USSR Author's Certificate No 331302

indicator, and by making the NMR signal phase regulator in the form of two mutually synchronized flip-flops with shaping devices. These flip-flops are connected to an inductive phase shifter and a compensation amplifier.

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USSR

UDC 616.936.2-085.926-039.71

TIBURSKAYA, N. A., SERGIYEV, P. G., MORKOVKIN, V. M., Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martynovskiy, Ministry of Health USSR, and First City Psychiatric Clinical Hospital imeni P. P. Kashchenko

"Radical Chemoprophylaxis of Three-Day Malaria of Two Incubation Types with the Shorter Incubation Type Predominating"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 4, Jul/Aug 71, pp 431-433

Abstract: Research was conducted at the First City Psychiatric Clinical Hospital imeni P. P. Kashchenko on patients requiring malaria therapy. Forty-seven patients were infected with strain P. vivax via mosquito bite producing malaria of two incubation types, with predominance of the shorter incubation on types. Of the 25 patients in the experimental group, 14 received bionycin; and 11 received chloridine, with 5 also receiving quinocide 5 months after infection. Results showed that patients receiving bionycin in doses of 2 g daily over seven incubation days and patients receiving chloridine in doses of 0.05 g daily over the first 3 incubation days showed no primary disease manifestations. Subsequent relapses were not eliminated, however. Daily 0.05 g doses of chloridine over 3 incubation days and with quinocide in 0.03 g daily 1/2

USSR

TIBURSKAYA, N. A., et al., Meditsinskaya Parazitologiya i Parazit inyye
Bolezni, Vol 40, No 4, Jul/Aug 71, pp 431-433

doses over a 10 day period within 5 months of infection eliminated initial
and relapse symptoms of the disease.

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MOROKOVIN, Ye. I.

SO: JPRS 59279
14 June 73

GROWTH OF EPITAXIAL SILICON FILMS WITH THE APPLICATION OF HYDROGEN OF HIGH PURITY AND THE STUDY OF THEIR PROPERTIES. *Pln. Semiconducting Materials*

(Article by Ye. I. Morokovin, A. S. Lysytskaya, V. M. Mikhedyn, L. A. Porozova, Ye. A. Morokovina, Novosibirsk, Polzunovskiy Institut Khimicheskoy Fiziki, Sibirskiy Nauchnyy Tsentr, Novosibirsk, Russian. Part 2, 1972, pp 37-41)

The most prospective and controllable method of growing epitaxial films of silicon is the reduction of its tetrachloride in the region of the heated surface of the monocrystalline substrate of silicon in a hydrogen current. Although this process is the subject of many papers [1-3], the effect of oxygen on the electrophysical properties and the growth kinetics of epitaxial silicon films have been studied inadequately [3].

We have performed comparative experiments to obtain the epitaxial films of high purity (total admixture content $2 \cdot 10^{-4}$ percent by volume) containing a controllable admixture of water vapor in the hydrogen. In Figure 22 we have the schematic of the experimental temperature-position device together with the system for batched introduction of water vapor into the hydrogen.

The epitaxial films were obtained on substrates of various types which were placed on the silicon base heated by high frequency currents. The process was realized in a vertical quartz reactor, and the quantity of hydrogen and chlorine was regulated within the desired limits. The optimal growth temperature was 1200-1250°C. The silicon chloride had a total impurity content of no more than 10^{-6} percent.

In order to investigate the effect of the oxygen on the growth process, a special saturation system was used (Figure 23).

The hydrogen saturated with water vapor came into the reaction area after the temperature of the substrate reached 1250°C. The substrates were subjected to the effect of the wet hydrogen in practice together with the beginning of deposition. This permitted the pickling effect of the water vapor on the substrate to be avoided [3] and unique data to be obtained on the effect of the water vapor and the oxygen (at a growth temperature of 1250°C, dissociation of the water with the formation of free O_2 takes place). The deposition was carried out with a flow rate of approximately 1 liter/min with a mole fraction of $SiCl_4$ in the H_2 equal to 0.005.

USSR

UDC 632.95

BALTRUSHIS, R. S., BERESNEVICHYUS, Z.-I. G., ~~MORKUNAS, A. V.~~, and MORKUNENE, M. P., Kaunas Polytechnic Institute and Botanical Garden of the Institute of Botany of the Academy of Sciences Lithuanian SSR

"Legume Growth Stimulant"

USSR Authors' Certificate No 317367, Cl. A 01 n 5/00, filed 23 Apr 70, published 22 Dec 71 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N550P by T. A. Belyayeva)

Translation: The authors suggest the use of the sodium salt of N-(4-quinolyl)-beta-alanine as a biologically active substance to stimulate the growth and development of legumes. The increase in the number of pods per plant is 16.5-18.2%, in yield per plant 34.2-40.7%, and in the weight of 1000 seeds 6.5-6.9%.

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USSR

UDC 632.95

BALTRUSHIS, R. S., BERESNEVICHYUS, Z.-I. G., MORKUNAS, A. V., and ~~MORKUNENE~~
~~M. P.~~ Kaunas Polytechnic Institute and Botanical Garden of the Institute of
Botany of the Academy of Sciences Lithuanian SSR

"Legume Growth Stimulant"

USSR Authors' Certificate No 317367, Cl. A 01 n 5/00, filed 23 Apr 70, pub-
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T. A. Belyayeva)

Translation: The authors suggest the use of the sodium salt of N-(4-quinolyl)-
beta-alanine as a biologically active substance to stimulate the growth and
development of legumes. The increase in the number of pods per plant is 16.5-
18.2%, in yield per plant 34.2-40.7%, and in the weight of 1000 seeds 6.5-6.9%.

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USSR

MORKVENAS, R., PRAGARAUSKAS, G.

"Games Version of the Problem of the Optimal Halt"

Lit. Mat. Sb. [Lithuanian Mathematics Collection], 1972, Vol 12, No 3, pp 107-112 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V88 by the authors).

Translation: Suppose in the probability space (Ω, \mathcal{F}, P) we fix the set of non-decreasing σ -subalgebras $\{\mathcal{F}_n, n = 0, 1, 2, \dots\}$ of σ -algebra \mathcal{F} and \mathcal{F}_n measured as a function of x_n, ϕ_n are defined. The process x_n can be stopped by the first player at moments n when $\phi_n > 0$, by the second player when $\phi_n < 0$. If the game is stopped at moment n , the second player receives x_n from the first player. Suppose $E(\sup |x_n|) < \infty$. The "truncated" process is studied. The value of W_n^N and optimal strategies σ_0^N, τ_0^N of the "truncated" process are defined. It is proven that where $N \rightarrow \infty, W_n^N \rightarrow W_n$, where W_n is the value of the game of the "nontruncated" process.

1/1

Therapy

USSR

BELOKUROV, Yu. N., KAMENNYI, A. N., MORAYKO, A. S. and MIKHAYLOV, V. P.,
Faculty Surgical Clinic, Yaroslavl Medical Institute

"Treatment of Anaerobic Infection with Hyperbaric Oxygenation"

Leningrad, Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

Translation: We have successfully used the method of hyperbaric oxygenation for the treatment of three patients with anaerobic infection of the extremities, spreading over the trunk.

In all three patients, the diagnosis was confirmed bacteriologically, and X-ray pictures showed gas in soft tissues. The treatment was conducted in a chamber designed by Yu. N. Belokurov. During the treatment sessions, the electrocardiogram, respiratory frequency, rheovasogram, and blood pO_2 of the patient were recorded. Each oxybarotherapeutic session lasted 2-3 hours, and the oxygen partial pressure was raised to a maximum of 2.8 atm. Each patient underwent from four to six of these treatment sessions.

We observed no complications from this treatment method. Detoxification therapy was simultaneously applied and consisted of administering antigangrene serum (up to 300,000 units per day), protein and electrolyte solutions, and

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USSR

BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70,
pp 137-138

antibiotics. Even after the second therapeutic session, a marked clinical effect was observed, with disappearance of signs of gas gangrene in two patients.

The method was successful even when radical surgery was impossible due to the spreading of the process over the trunk.

1. Patient Shch, 35 years old. Delivered to the hospital on 23 January 1968, 6 hours after trauma sustained at work. Diagnosis: Open fracture of the pelvis; rupture of the ampullar portion of the rectum and the urethra; tear wound on right buttock; and third-degree shock.

The patient was brought out of shock, a suprapubic fistula of the urinary bladder was made, and the wounds were treated surgically without sutures. Forty-four hours after the trauma, the patient's temperature was 40°C, a swelling of the right buttock developed with bronze-cyanotic discoloration of the skin, and the wounds discharged an exudate of dirt and blood. Palpation revealed crepitation in the area of the right buttock and the perineum. A diagnosis of gas and edematous form of anaerobic infection was made. Skin and fascia cuts were made in the buttock and perineum, and antigangrene serum up to 150,000 Au per day was administered. On 26 January, the edema and gas spread

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USSR

BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70,
pp 137-138

over the trunk, the wounds were necrotic, and the protruding muscles acquired a gray color. The patient was passive; pulse rate was 120 beats per minute. Sixty-eight hours after the beginning of the disease, the patient was sent to our clinic for oxybarotherapy. The first treatment was given on 26 January; it lasted 2.5 hours, with oxygen pressure in the chamber up to 2 atm. On 27 January, the patient's temperature was subfebrile, he was conscious, the hip swelling had diminished 4 cm, and the tissue around the wounds acquired a viable color. On the same day, the second oxybarotherapeutic treatment was given for 3 hours, with a pressure of 2.8 atm. After that, the bronze-cyanotic discoloration of the skin disappeared, the wounds exuded a moderate amount of a serous fluid, and the muscles became pink and were no longer protruding. The size of the right hip rapidly diminished to that of the healthy hip, and crepitation disappeared. The temperature was subfebrile, and the signs of gas gangrene were gone.

2. Patient R., 22 years old. On 8 March 1969, the patient sustained fourth-degree electrical burns on both wrists and forearms from 10,000 volt alternating current. On 13 March, he was delivered in serious condition to the Vologotskaya Oblast Hospital, where the following diagnosis was made:
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USSR

BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

electrotrauma complicated by anaerobic infection spreading over the ventral surface of the neck and chest.

On 14 March, the patient was sent to our clinic in very serious condition, with a gray-earthy face color, icteric scleras, pulse of 120, and a temperature of 39.2°C. There are necrosis of both wrists and forearms up to the middle third. On the left side, the swelling and hyperemia spread to the lateral surface of the neck and over the subclavicular area. There was distinct crepitation to palpation. X-ray pictures revealed gas. Bacteriological analysis of the wound exudate established the presence of *C. perfringens* and hemolytic *Staphylococcus aureus*.

The patient was placed in the barochamber for four hours at a pressure of 2.5 atm. Within 24 hours, the patient's condition improved considerably, his temperature fell to subfebrile, swelling of the limbs diminished, and crepitation disappeared. On the following days, two more oxybarotherapeutic treatments were given. On 17 March, necrectomy was performed in the middle third of the left arm and the upper third of the right forearm. After surgery, the patient was again placed in the barochamber. On the following days, the patient improved rapidly. His temperature was subfebrile, and

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USSR

BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

of the wound content revealed the presence of *C. perfringens*.

On 20 and 21 April, two oxybarotherapeutic treatments were administered, each lasting 3 hours at a pressure of 2.8 atm. The patient's general condition improved, his temperature was subfebrile, and the clinical signs of gas gangrene disappeared. On 21 April there was a sudden massive hemorrhage from the wound. The patient's condition markedly deteriorated, and his pulse rose to 130 beats per minute. The hemorrhage was stopped by conventional methods. On 24 April, as a result of an ischemic gangrene of the extremity, the patient's leg was amputated at the level of the middle third of the thigh. After surgery the patient was given four more oxybarotherapeutic treatments which considerably improved his general condition. The patient recovered.

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USSR

BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

the stumps were gradually cleared of necrotic areas and pus and became covered with granulations and epithelization from the edges. The patient recovered and, on 20 April, was transferred to the Vologotskaya Oblast Hospital for further treatment.

3. Patient D., 38 years old. On 15 April 1969, the patient had an automobile accident and sustained an open fracture in the middle third of the right thigh and a laceration of the wall of the femoral artery. He was delivered to the district hospital in a state of shock. After the shock was treated, an osteosynthesis was performed on his right thigh, and his femoral artery was sutured. On the fifth day, the edematous and gaseous form of anaerobic infection developed in the thigh. Longitudinal cuts were made in the thigh, and the patient was sent to our clinic.

At admission on 20 April, he was in serious condition; his skin and scleras were icteric, his pulse was 100 beats per minute, his right thigh was edematous and the swelling was spreading over the shank, and the skin on the thigh had a bronze hue extending over the inguinal fold. A serous pus was discharging from the wound, and the muscles had a "cooked" color. Gas was emitted upon palpation and application of pressure. Bacteriological analysis

5/6

USSR

UDC 615.371:576.858.21].072

MAD'YAROVA, R. S., NIKOLAYEVA, N. V., MOROGOVA, V. M., and GIL'DINA, S. S.,
Ufa Scientific Research Institute of Vaccines and Sera imeni I. I. Mechnikov

"Determination of Specific Antirabies Vaccine Activity by the Degree of
Antibody Adsorption"

Moscow, Voprosy Virusologii, No 1, 1973, pp 77-82

Abstract: The long testing time and variability involved in the Habel and NIH methods for determining immunogenicity of antirabies vaccines necessitated development of a new method employing antibody adsorption by the vaccine. Antibody adsorption was found to be optimum when a mixture of vaccine and gamma-globulin was kept at 4°C for 20 hours followed by 1 hour at 37°C, or at 37°C for 3 hours. Immunogenicity of Moskva strain and CVS standard virus vaccines was tested by this method in comparison with a reference vaccine. No significant differences were found. Next the 3 methods were compared in tests with Fermi vaccine. Variation in the revealed immunogenicity was statistically insignificant. Thus use of the new method is recommended, particularly because it requires half the testing time needed for the Habel and NIH methods.

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1/2 027
TITLE--ANTIGENIC ACTIVITY OF DRY SUCROSE ANTIRABIC VACCINE FROM SHEEP
BRAIN -U-
AUTHOR--(04)-MOROGOVA, V.M., GILDINA, S.S., AKCHURINA, A.B., FILIMONOVA,
YE.M.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 197-199
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--VIRAL VACCINE, RABIES, ANTIGEN, BRAIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0732

STEP NO--UR/0402/70/000/002/0197/0199

CIRC ACCESSION NO--AP0108938

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108938

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF VIRUS NEUTRALIZING ANTIBODY WAS STUDIED IN SERATAKEN FROM 30 SUBJECTS RECEIVING A COMPLETE COURSE OF VACCINATIONS WITH COMMERICAL DRY ANTIRABIC VACCINE. A HIGH ANTIGENIC ACTIVITY OF THIS PREPARATION WAS ESTABLISHED.

UNCLASSIFIED

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USSR

UDC 542.65:669.721:669.6

MOROKHOVETS, M. A., SOKOLOV, Ye. B., and SUFOCHNIKOVA, G. A., Moscow
Institute of Fine Chemical Technology, Chair of Semiconductor Materials
Technology

"Characteristics of Magnesium Behavior in Tin Crystallization"

Ordzhonikidze, Tsvetnaya Metallurgiya, Vol 14, No 3, 1971, pp 50-53

Abstract: A study was made of the distribution of magnesium on the ingot after directional crystallization and of solid solutions of Sn containing Mg the initial materials were OVCh-000 tin containing 99.995% of the basic substance and magnesium obtained by chemical purification of MG-1 magnesium and containing not more than 0.001% impurities. The investigation results are discussed by reference to curves showing the dependences of Mg concentration on the crystallized part of the specimen (crystallization rate 0.15 mm/min) and the part of wt. of the ingot for two crystals (crystallization rate 0.045 mm/min). Except their first part, the curves show an impurity distribution by directional crystallization which is characteristic for a distribution coefficient $K < 1$ of Mg in Sn. The actual distribution coefficient of Mg was found to be of the order of 0.03-0.04. Three illustr., four biblio. refs.

1/1

3

USSR

UDC: 539.121.75

GRISHAYEV, I. A., YEFIMOV, V. P., KASILOV V. I., KOVALENKO, G. D., MORO, ~~KHOVSKIY, V. L.~~, FISUN, A. N., SHRAMENKO, B. I., Physicotechnical Institute, Academy of Sciences of the Ukrainian SSR, Khar'kov

"Concerning Some Particulars of the Interaction of High-Energy Electrons and Positrons With Crystals"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 9, Sep 71, pp 1548-1550

Abstract: The total yield of electron and positron bremsstrahlung is studied as a function of crystal orientation when the primary beam is nearly parallel to the crystal axis. The electron and positron beams were characterized by the following data: the energy at the maximum of the spectra was (1000 ± 5) MeV; the width of the energy spectra in both instances was $\sim 4\%$; there was no more than 8% difference between the average currents of the electron and positron beams; the difference in angular divergences of the beams was no more than $5 \cdot 10^{-5}$ radian; the number of charged background particles did not exceed 0.05% of the number of electrons and positrons respectively. The experiment was done on the

1/2

USSR

GRISHAYEV, I. A. et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 9, Sep 71, pp 1548-1550

accelerator at the Physicotechnical Institute of the Academy of Sciences of the UkrSSR. The background due to positron converter photons was 30% of the measured total photon yield and varied by 0.5% during the experiment. Silicon crystals 0.64 mm thick cut in plane (110) and niobium crystals 1 mm thick cut in plane (100) served as the specimens. The strongest distinguishing parameter on the curves plotted for bremsstrahlung yields as related to crystal orientation was the width of the minimum in the small-angle region, which was less for positrons than for electrons in both instances. Controlled experiments seem to indicate that this effect can be attributed to the sign of the charge. The authors thank V. M. Kobezskiy, V. I. Myakota, and V. I. Popenko for maintaining stable accelerator operation; V. I. Artemov for assisting with measurement of beam parameters; and Ye. A. Levikov for assisting with preparation of the crystals. One figure, bibliography of five titles.

2/2

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USSR

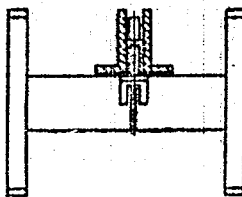
UDC: 621.317.799

MELENIK, B. V., MOROKOV, F. A., BRIDAVSKIY, V. L.

"A Waveguide Pickup for Checking Transmitted SHF Power"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317000, Division G, filed 7 Feb 70, published 7 Oct 71, p 158

Translation: This Author's Certificate introduces a waveguide pickup for checking transmitted SHF power. As a distinguishing feature of the patent, the device is designed for checking low-level SHF power transmission in a waveguide channel without using intermediate connecting elements. A semiconductor measurement thermistor is connected to the narrow wall of the waveguide at the point where the electric component of the electromagnetic field vanishes. Connection is made through narrow transverse slots in the waveguide walls.



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Inorganic Compounds

USSR

UDC: 541.49:546.195'873'776'

MOROSANOVA, S. A., TUMUROVA, L. V., LYALYULINA, L. A.

"Investigation of the Process of Ascorbic Acid Reduction of 12-Molybdoarsenate in the Presence of Trivalent Bismuth"

Moscow, Vestnik Moskovskogo Universiteta, Ser. II: Khimiya, Vol 13, No 2, Mar/Apr 72, pp 215-219

Abstract: The process of ascorbic acid reduction of 12-molybdoarsenate in the presence of trivalent bismuth was studied by photometric and kinetic methods. The SF-4 spectrophotometer was used for the photometric analysis, and the FEK-M photoelectric colorimeter was used for the kinetic studies. The spectrophotometric study consisted in measuring the optical density of the reaction mixture resulting from the addition of ascorbic acid to a solution of sodium arsenate, bismuth nitrate, sodium molybdate and sulfuric acid. The results of the study show that a mixed molybdenum-bismuth-arsenic compound is formed at the beginning of the reduction process with ratio $[As]:[Bi] = 1$. After passing through a number of molybdenum-bismuth-arsenic complexes, the reduction reaction yields 12-molybdoarsenate.

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USSR

UDC 621.317.743

KERNOGO, L. A., and MOROSHEK, E. Z., Central Scientific Research and Design Engineering Institute for Organization and Technical Management

"Signalling Device"

USSR Author's Certificate, Class G O b 1/08, No 339928, filed 28 July 70, published 19 July 72 (RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 2, Mar 73, Abstract No 3 A 350P)

Translation: The authors propose a signalling device, containing a synchronization unit, the synchronous inquiry output signals of which are connected to the inputs of sensors of the states of an object and to the control input of a signal commutator. The outputs of the commutator are connected to the inputs of an indicator unit. The device is made more economical by including a cycle frequency divider and switch, so that the information input of the signal commutator can be connected to the outputs of one of the state sensors and the output of the switch; the first input of the switch is connected to the outputs of other state sensors, while the second is connected to the output of the frequency cycle divider, whose inputs are, in turn, connected to the output of the cycle start signal from the synchronization unit. One illustration.

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- 4 -

Acc. Nr:

AP0036436

Ref. Code: UR 0213

PRIMARY SOURCE: Okeanologiya, 1970, Vol 10, Nr 1, pp 38-47

K. V. MOROSHKIN, V. A. DUBNOV, R. P. BULATOV

WATER CIRCULATION IN THE SOUTHEASTERN ATLANTIC

Summary

Experimental studies were carried out during the 3rd cruise of the R/V «Akademik Kurchatov» to verify the hypothesis by V. G. Bogorov, V. N. Stepanov and R. P. Bulatov who suggested the cyclonic character of water circulation resulting in the high biological productivity in the eastern parts of the tropical zones of the oceans. A detailed hydrological survey with long-term current measurements at buoy stations have revealed a large-scale tropical cyclonic gyre existing between 10 or 20 m and 300 m depths under a very thin surface wind-driven current. Its northern periphery is formed by the South Equatorial counter-current between 5° and 9° S latitudes with 30 to 50 cm/sec velocities. Near the African coasts this counter-current changes into the Angola current with the maximum velocities of about 50 cm/sec between latitudes 9° and 16° South. The Angola current penetrates as deep as 250 to 300 m below the surface and embraces both the shelf and the continental slope. South of the area under study, the Benguella

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REEL/FRAME
19721280

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current turns to the west and has the width from 200 to 300 miles and the maximum velocity of about 15 or 20 cm/sec. There are three streams in the Benguella current running along the shore as far north as 13-14° S latitude. The interaction of the second northern stream of the Benguella current with the Angola current forms a divergence zone along 11° E longitude between 17° and 13° S latitudes. The quasi-stationary anti-cyclonic curl in the upper 100 m layer with the center at 7°30' S latitude and 9°30' E longitude has been found to the south-west of the Congo River mouth.

D. 71 .

19721281

2/2

Analytical Chemistry

UDC 543.42'213

USSR

MOROSHEVA, T. M., and VANAYEVA, L. V., Leningrad State University imeni
A. A. Zhdanov, Leningrad

"Chemico-Spectrographic Determination of Niobium, Tantalum, Zirconium, Hafnium,
and Beryllium in Minerals and Ores"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 12, Dec 70, pp 2,374-2,376

Abstract: On decomposition of 0.2 g samples of minerals (biotites, muscovites, garnet) or silica ores with HF + H₂SO₄, enrichment of Ta, Be, Nb, Zr, and Hf was carried out by adsorption on powdered pyrogallol-CH₂O resin of acidic condensation. Upon addition of complexon III (di-Na salt of E.D.T.A.) to the H₂SO₄ solution to eliminate interference by admixtures, the solution was shaken with the resin first at pH 4 and then at pH 8.5-8.7 after being brought to these pH values by the addition of NH₄OH. After ashing of the resin that contained the adsorbed elements to be determined, these elements were determined spectrographically in the ash at 3163.40, 2714.67, 3138.66, 3012.89, and 3131.07 Å for Nb, Ta, Zr, Hf, and Be, respectively. By applying this method, minimum amounts of 3 X 10⁻⁴% Ta and 2 - 5 X 10⁻⁵% Nb, Zr, Be, and Hf could be determined with an error of the order of 20-26%. In determinations

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USSR

MOROSHKINA, T. M., and VANAYEVA, L. V., Zhurnal Analiticheskoy Khimii, Vol 25,
No 12, Dec 70, pp 2,374-2,376

carried out on 1 g samples, the precision of the method was greater by a
factor of 5.

2/2

- 10 -

PHYSICS
Acoustics

UDC 535.225.534.232.8

USSR

GINGIS, A. D., DOKHIKYAN, R. G., KARINSKIY, S. S., and MOROSOV, A. I.

"Measurement of Ultrasonic Wave Attenuation and Photoelastic Constants for Cubic CaF_2 and BaF_2 Crystals"

Moscow, Izvestiya Akademii Nauk SSR, Seriya Fizicheskaya, Vol 35, No 5, May 71, pp 984-986

Abstract: The article describes results of a study of the dependence of longitudinal ultrasonic wave absorption in CaF_2 and BaF_2 crystals on frequency. as well as the photoelastic constants of BaF_2 single crystals. the results indicate the following: 1) BaF_2 and CaF_2 materials are promising for use in ultrasonic devices owing to low ultrasonic wave attenuation and the possibility of fabricating large-size crystals; 2) BaF_2 single crystals can be used as an acoustic line for ultrasonic light modulators over a wide range of light waves.

i/1

USSR

UDC 576.851.48.095.14

GROMOVA, T. G., and ~~MOROZ, A. E.~~ Department of Infection Pathology and Experimental Therapy of Infections, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Effect of the R-Factor on the Sensitivity of E. coli Cells to Ultraviolet and Gamma Irradiation"

Moscow, Antibiotiki, No 11, 1971, pp 995-998

Abstract: The extrachromosomal genetic resistance factor R was transferred from donor cells to E. coli by the conjugation method. The recipient cells were irradiated with gamma rays in doses of 2.5, 5, 10, or 20 Krad or with ultraviolet light for 2.3, 5, 7.5, 10, 12.5, or 15 min and were subsequently grown on agar for 18 hours at 37°C. Recipient cells were resistant to nalidixic acid. The number of colonies was counted, and the results were plotted as survival curves. Only one E. coli strain out of eight became somewhat more resistant to ultraviolet light than the controls. A protective effect with respect to gamma rays was observed in two out of eight recipient strains. Since the survival curves of the recipient cells with increased resistance and of the controls have different slopes but identical "shoulders," it is concluded that the R+ cells have a greater recovery capacity.

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1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ELIMINATION OF MULTIPLE DRUG RESISTANCE IN COLI BACTERIA BY
AURANTIN AND ULTRAVIOLET LIGHT -U-
AUTHOR--(03)-BRODINOVA, N.S., MOROZ, A.F., GLATMAN, L.I.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 3, PP 244-249

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, DRUG RESISTANCE, ACTINOMYCES, STREPTOMYCIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1985/0472

STEP NO--UR/0297/70/015/003/0244/0249

CIRC ACCESSION NO--AP0100950

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100950

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS SHOWN THAT AURANTIN, AN ANTICANER ANTIBIOTIC FROM THE GROUP OF ACTINOMYCINS ELIMINATED MULTIPLE DRUG RESISTANCE IN ONE OF THE TWO STRAINS OF E. COLI STUDIED AT A RATE OF 0.5PERCENT. IN CULTURES OF E. COLI (R PRIME PLUS) TREATED WITH AURANTIN, SEGREGATION OF THE RESISTANCE MARKERS FROM R FACTOR WAS ALSO OBSERVED AND SEGREGANT CLONES WITH ELIMINATED RESISTANCE MARKERS (TC PRIMECH) LM PRIMEP SM PRIMEP, (LM PRIMECH SM PRIMECH), TC PRIMEP SU PRIMEP (SM PRIMECH) TC PRIMEP NEGATIVE LM PRIMEP SU AND R COLONIES (TC PRIMECH LM PRIMECH SM PRIMECH SU PRIMECH) WERE FORMED. ON COMBINED TREATMENT WITH AURANTIN AND ULTRAVIOLET LIGHT THE NUMBER OF R COLONIE AND SEGREGANT CLONES (TC PRIMECH) LM PRIMEP SM PRIMEP SU PRIMEP SENSITIVE TO TETRACYCLINE SIGNIFICANTLY INCREASED (UP TO 30.4PERCENT). AT THE SAME TIME ADDITIONAL COLONIES WITH SEGREGATED RESISTANCE MARKERS (SM PRIMECH SU PRIMECH) TC PRIMEP SU PRIMEP SENSITIVE TO STREPTOMYCIN AND SULFADIMEZINE WERE DETECTED. COLONIES WITH LOST R FACTOR ACQUIRED IT UNDER THE EFFECT OF AURANTIN AND ULTRAVIOLET LIGHT AT A RATE OF 10 PRIME NEGATIVE3. NO TRANSFERANCE OF TETRACYCLINE AND SULFADIMEZINE RESISTANCE MARKERS NOT ELIMINATED BY AURANTIN AND ULTRAVIOLET LIGHT WAS OBSERVED ON CONJUGATION WITH THE RECIPIENT CELLS SENSITIVE TO THESE ANTIBIOTICS. SENSITIVITY TO AURANTIN OF E. COLI STRAINS, CARRYING R FACTORS, AND SEGREGANT CLONES WITH ELIMINATED RESISTANCE MARKERS DID NOT CHANGE.

UNCLASSIFIED

USSR

UDC 62-50

MOROZ, A. I.

"The Problem of Synthesis of a Time-Optimal Control for Linear Systems"

Moscow, Metody Optimizatsiy Avtomaticheskikh Sistem, 1972, pp 275-286

Abstract: This article discusses the problem of synthesis of a time (speed)-optimal control for continuous linear systems. The review does not cover optimal control algorithms based on the use of digital computers which either calculate the initial values of the conjugate variables or solve the problem of minimization of a certain function or solve transcendental equations. Attention is concentrated on problems in the second stage of the overall problem of synthesis, and it is shown that in linear problems the optimal control can be determined by simple means.

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- 20 -

Acc. Nr:

AP0040873

M

Ref. Code:

UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, PP 24-35

CONCERNING PROBLEM OF SYNTHESIS OF TIME-OPTIMAL CONTROL /

A. I. MOROZ

There are investigated the surfaces of switching of time-optimal synthesizing functions for linear stationary and nonstationary systems.

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REEL/FRAME
19750612

USSR

UDC 614.72:632.954(047)

M
GZHEGOTSKIY, M. I. and MOROZ, A. M., Central Scientific Research Laboratory of
Biologically Active Substances, L'vov Medical Institute

"Accumulation, Circulation, and Persistence of Herbicides in the Environment"

Moscow, Gigiyena i Sanitariya, No 5, 1970, pp 79-83

Abstract: This is a review of the Soviet and foreign literature (about 40 reports) on the subject. The reports deal with the effect of soil temperature, moisture content, evaporation, leaching, type of soil, microbial activity, uptake by plants, and other factors on the accumulation and persistence of a variety of herbicides. Many herbicides are readily leached from the soil into the groundwater, where they may remain indefinitely. The evidence points to the fact that they can accumulate in food plants grown on soil treated with them, and thus constitute a hazard for the animal and human consumers of these plants. Many herbicides have not been studied in this respect, nor has much attention been paid to the accumulation of herbicides in relation to climatic conditions.

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USSR

UDC: 621.317.089.68:621.396.62

VASIL'YEV, N. M., TRET'YAKOV, L. N., TUGARINOV, I. M., MOROZ, A. M.

"Equipment for Receiving the Carrier Frequencies of Centimeter Wavelength Radio Stations"

Dokl. Nauchno-tekhn. seminar "Metrologiya v radioelektronike". Temisy. Ch. 2 (Reports of the Scientific and Technical Conference on Metrology in Radio Electronics. Summaries. Part 2), Moscow, 1970, pp 92-101 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A206)

Translation: The paper describes equipment developed at the All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements for receiving the carrier frequencies of centimeter wavelength radio stations and comparing them with the frequency of a secondary standard. Block diagrams are given for the systems of reception and comparison, the circuits of the mixer and multipliers, and also the results of an investigation of the phase stability of the receivers and synthesizers. The results are analyzed. E. L.

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TONUS OF CEREBRAL VESSELS IN FOOD TOXICOINFECTIONS -U-
AUTHOR--~~MOROZ, A.S.~~ M
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 149-150
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD VESSEL, FOOD, POISON EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0990 STEP NO--UR/0475/70/000/003/0149/0150
CIRC ACCESSION NO--AP0109147
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0109147
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF CALIBROMETRY OF THE
RETINAL BLOOD VESSELS INDICATE THAT THE ACUTE PERIOD OF FOOD
TOXICINFECTIONS IS ACCOMPANIED IN THE SEVERE PERIOD OF THE DISEASE BY
VASODILATION OF THE CENTRAL RETINAL ARTERY AND CENTRAL RETINAL VEIN.

UNCLASSIFIED

USSR

MOROZ, A. T., Chelyabinsk Laboratory of State Supervisory Committee for Standards and Measurement Equipment

"New Achievements by the Metallurgists of Chelyabinsk"

Moscow, Standarty i Kachestvo, No 11, Nov 73, p 84

Abstract: On 14 December 1972, the State Attestation Commission awarded the State Mark of Quality to two products of the Chelyabinsk Metallurgical Plant: bars of nickel-based heat-resistant steel and bars of heat-resistant steel. These heat-resistant steel bars are used in the manufacture of turbine wheels and other engine parts. This mark of high quality was achieved by: improving the vacuum-induction melting process; refinement of the chemical composition as to content of titanium, aluminum, silicon, carbon, manganese, etc.; decreasing the content of the harmful impurities sulfur and phosphorous; and increasing the technological ductility and long-term strength of the alloy.

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USSR

UDC 577.391

MOROZ, B. B., Institute of Biophysics, Ministry of Health USSR, Moscow

"Hyperadrenocorticism and Its Role in the Pathogenesis of Acute Radiation Sickness"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 98-102

Abstract: The adrenocortical reaction to gamma-irradiation and the role of glucocorticoids in the pathogenic and recovery processes of acute radiation sickness were studied in rats and rabbits. It was found that an 800 r dose induced dissociation in the protein-corticosteroid complex. A large amount of a free fraction of glucocorticoids was observed in the blood. Increased activity of this hormone, which has a damaging effect on radiosensitive tissue, aggravates the pathogenic process. Experiments were also performed on rats with perirenal adrenal autotransplants. When the animals were exposed to irradiation 27-30 days following the operation, the adrenals were less radiosensitive than in control animals. Subnormal levels of corticosteroids and glucocorticoids in the blood plasma resulted in attenuation of the pathogenic process.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ROLE OF LYMPHOID TISSUE IN THE MECHANISM OF HYDROCORTISONE
INDUCTION OF GLYCOGEN AND PROTEIN SYNTHESIS IN RAT LIVER -U-
AUTHOR--(02)-KENDYSH, I.N., MURDZ, B.B. M
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKADE. NAUK SSSR 1970, 190(5), 1254-6
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GLYCINE, CARBON ISOTOPE, CHEMICAL LABELLING, LYMPHOID TISSUE,
HYDROCORTISONE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0890 STEP NO--UR/0020/70/190/005/1254/1256
CIRC ACCESSION NO--AT0129959
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129959

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATS WERE GIVEN GLYCINE PRIME14 C AND 18 HR LATER HYDROCORTISONE (10 MG, I.P.). TOTAL GLYCOGEN, RADIOACTIVE GLYCOGEN, AND RADIOACTIVE PROTEIN INCREASED IN THE LIVER DURING THE FOLLOWING 24 HR. APPARENTLY, HYDROCORTISONE CAUSES CLASHATOSIS OF LYMPH CELLS, AND THE DEBRIS ENTERS THE LIVER AND STIMULATES SYNTHETIC ACTIVITY. FACILITY: INST. BIOFIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF VARIOUS DOSES OF GAMMA IRRADIATION ON THE CORTICOSTERONE
LEVEL IN RAT PLASMA -U-
AUTHOR-(02)-MOROZ, B.B., DUBROVIN, A.D.
COUNTRY OF INFO--USSR M
SOURCE--RADIOBIOLOGIYA 1970, 10(1), 152
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GAMMA IRRADIATION, RADIATION BIOLOGIC EFFECT, RAT, RADIATION
DOSAGE, BLOOD PLASMA, CORTICOSTEROID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0454 STEP NO--UR/0205/70/010/001/0152/0152
CIRC ACCESSION NO--AP0121128
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GAMMA IRRADIATION OF RATS WITH 900, 700, OR 430 R (30 DAY LD SUB100, LD SUB50, AND LD SUB25, RESP.) INCREASED PLASMA CORTICOSTERONE (I) LEVELS 2 FOLD. AFTER IRRADN. WITH 900 R, THE I LEVEL INCREASED WITHIN 1 HR AND AGAIN ON THE 3RD DAY; WITH 700R, WITHIN 3 HR, AND ON THE 9TH DAY; AND WITH 430 R, WITHIN 6 HR, AND ON THE 14TH DAY POSTIRRADN. THE MAGNITUDE OF THE 1ST INCREASE WAS INDEPENDENT OF THE IRRADN. DOSE, WHILE THE SECONDARY INCREASE WAS INVERSELY PROPORTIONAL TO THE IRRADN. DOSE. FACILITY: INST. BIOFIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 057 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF AN EXPLOSION ON A SUBSTANCE, CRYSTALLOGRAPHIC ASPECTS OF
PHASE TRANSITIONS IN BORON NITRIDE -U-
AUTHOR-(03)-BATSANOV, S.S., MGROZ, E.M., KUZUTIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 156-B

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTALLOGRAPHY, BORON NITRIDE, EXPLOSION, GRAPHITE,
COMPRESSION SHOCK WAVE, PHASE TRANSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0921

STEP NO--UR/0192/70/011/001/0156/0158

CIRC ACCESSION NO--AP0116431

UNCLASSIFIED

2/2 057

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116431

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE YIELD OF THE DENSE FORM OF BN, OBTAINED BY EXPLOSIVE COMPRESSION OF HEXAGONAL BN, INCREASES WITH INCREASING DEGREE OF PERFECTION IN THE LATTICE OF HEXAGONAL BN (BAISANOV, ET AL., 1968). THE STRUCTURE OF HEXAGONAL BN WAS STUDIED IN MORE DETAIL TO EXPLAIN THE MECHANISM OF THE TRANSITION TO THE DENSE FORM. THE PACKING OF HEXAGONAL BN IS VERY LOOSE BEFORE ANNEALING; THE MAIN DEFECTS ARE PARALLEL SHIFTS OF THE BN PLANES RELATIVE TO EACH OTHER. ANNEALING (1000-2000DEGREES) REMOVES THE DEFECTS BOTH WITHIN AND BETWEEN THE LAYERS AND EVIDENCED BY THE SHARPENING OF THE 002 LINE AND ITS SHIFT TOWARDS GREATER BRAGG ANGLES. ON THE OTHER HAND, EXPLOSIVE COMPRESSION SHARPENS THE 002 LINE BUT DOES NOT SHIFT ITS POSITION, SHOWING THAT ONLY DEFECTS WITHIN THE LAYERS ARE REMOVED. SUBSEQUENT ANNEALING OF THE EXPLOSIVELY COMPRESSED SAMPLES SHIFTS THE 002 LINE TO GREATER BRAGG ANGLES WITH SOME INCREASE IN THE LINE WIDTH. THE MECHANISM OF THE TRANSITION, BN (COORDINATION NO. 3) YIELDS BN (COORDINATION NO. 4), IS ANALOGOUS TO THE GRAPHITE YIELDS DIAMOND TRANSITION. EXPLOSIVE COMPRESSION FOLDS THE HEXAGONAL BN LAYERS AND FORCES THE ATOMS CLOSER TOGETHER, MAKING IT EASIER TO FORM THE NEW BONDS. THE FORMATION OF THE SPHALERITE TYPE MODIFICATION OF BN IS DISCUSSED. FACILITY: INST. TEPLDIZ., NOVOSIBIRSK, USSR.

UNCLASSIFIED

Explosives and Explosions

USSR

UDC 532.593-546.273-548.33

BATSANOV, S.S., MOROZ, E.M., KUZYUTIN, V.P., Institute of Heat Physics of the Siberian Division of the USSR Academy of Sciences, Novosibirsk

"Action of Explosion on Materials Crystallographic Study of Phase Transition in Boron Nitride"

Moscow, Zhurnal Strukturnov Khimii, Vol 11, No 1, 1970, pp 154-158

Abstract: A study was made of the actual structure of hexagonal BN preceding phase transition upon shock compression. A comparison was made of the molar volumes of hexagonal BN of differing densities with corresponding values of the true volume of the formula unit. A plot of volume of cell of hexagonal BN as a function of density showed that turbo-stratified BN has a very loosing packing. Its volume is 1.35 times greater than the true molecular volume. However, the small variation in the X-ray volume in the transition from almost amorphous to well crystallized state (only 5 percent) indicates that the main defects are parallel shifts of planes relative to each other. Results of shock compression of turbostratified BN ($d = 1.64-1.72 \text{ grams/cm}^3$) increased its density 2.04-2.07 grams/cm^3 . The authors thank R.S. ERENBURG and V.S. CHERKASSKIY for their assistance in the work.

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1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CALCULATING THE SURFACE OF A CATHODE FOR DIMENSIONAL PROCESSING -U-
AUTHOR--(03)-ALEKSEYEV, G.A., VOLKOV, YU.S., MOROZ, I.I. M
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 20-21
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--CATHODE, SURFACE PROPERTY, ELECTROCHEMICAL PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/1771 STEP NO--UR/0121/70/000/003/0020/0021
CIRC ACCESSION NO--AP0114270
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0114270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PRESENTED FOR
CALCULATING THE SURFACE OF THE CATHODE SO AS TO OBTAIN GREATER PRECISION
IN DIMENSIONAL ELECTROCHEMICAL PROCESSING UNDER STEADY STATE CONDITIONS.

UNCLASSIFIED

USSR

UDC: 681.333

MOROZ, I. P., KOBZOVA, V. M., KLOS, V. I., L'vov Affiliate of the Institute of Geophysics, Academy of Sciences of the Ukrainian SSR

"A Device for Modeling Problems of Electromagnetic Induction"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329537, Division G, filed 28 Sep 70, published 9 Feb 72, p 194

Translation: This Author's Certificate introduces a device for modeling problems of electromagnetic induction. The device contains a generator connected to an antenna system, and also includes an electromagnetic field pickup, a heterodyne, and a module for reception and registration. As a distinguishing feature of the patent, in order to eliminate interference and to increase precision and reliability, the device contains a frequency converter connected to an electromagnetic field pickup, and through transformers to the module for reception and registration and to a unit for stabilizing the output voltage level of the heterodyne.

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USSR

UDC 539.4:624

MOROZ, L. R., SMIRNOV, G. N.

"Dynamic Calculation of Gravity-Type Sea Walls"

Sb. tr. Mosk. inzh.-stroit. in-t (Collected Works. Moscow Structural Engineering Institute), 1970, No 78, pp 4-17 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V599)

Translation: A method of dynamic calculation of gravity-type sea walls is worked out on the basis of experimental studies under laboratory and semi-full scale conditions in the presence of a dynamic load which simulates the effect of broken waves and surf. The foundation was modeled by an optically active material (SKU-6 rubber) and by actual soil (sand). The nature of motion of the structure was determined for the case of external loads of varying intensity and duration. The relationship between the amplitude of displacement of the structure and the intensity of the external load was also determined for various load durations, as well as the nature of distribution of dynamic normal stresses in the base and the time dependence of this distribution, the relationship between dynamic

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USSR

MOROZ, L. R., SMIRNOV, G. N., Sb. tr. Mosk. inzh.-stroit. in-t, 1970, No 78, pp 4-17

normal stresses in the base and the impulse of external loads of various durations, and finally the effect which the inertness of the base has on the frequencies and amplitudes of oscillations of the structure, and also on the stressed state of the soil base. The model of an inertialess half space is used as the mathematical model of the soil base instead of the Winkler model. Fairly good agreement is observed between the values of the measured periods of natural oscillations of the fundamental tone of some actual sea walls and the values found by dynamic calculations. The results of calculations of these objects by the standard method and by the method proposed in the paper are compared. A. V. Ch.

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- 75 -

USSR

UDC: 669.017.11.295.292

SHUSHKANOV, V. M., MOROZ, L. S., OBUKHOVSKIY, V. V., KAPITONOVA, N. P.,
IVANOVA, N. V., Leningrad

"Solubility of Vanadium in α Titanium"

Izvestiya Akademii Nauk SSSR, No 4, Jul-Aug 73, pp 221-224.

Abstract: Considering that vanadium is one of the most important alloying elements used in the production of titanium alloys, this work attempts to establish the true limit of solubility of vanadium in α titanium. The paramagnetic susceptibility and modulus of elasticity of four alloys in the Ti-V system containing 0.50, 0.92, 1.40 and 2.30 wt. % vanadium were studied in various initial states. Methods were selected for high sensitivity to changes in electron structure of the alloys studied and interatomic bonding forces, hoping to record the initial stage of the formation of a second phase. The studies showed characteristic breaks on composition versus property curves of the alloys at 0.92 wt. % V, indicating changes in the interatomic bond energies and electron structure at this point. X-ray structural analysis showed that the breaks on the composition versus property curves correspond to appearance of the β phase. Thus, the equilibrium limit of

1/2

- 57 -

USSR

Shushkanov, V. M., Moroz, L. S., Obukhovskiy, V. V., Kapitonova, N. P.,
Ivanova, N. V., Izvestiya Akademii Nauk SSSR, No 4, Jul-Aug 73, pp 221-224.
solubility of vanadium in α titanium is not over 0.9 wt. % at 650-700° C.

USSR

UDC 620.17:669.295'229'71

MOROZ, L. S., and RAZUVAYEVA, I. N.

"Effect of β -Stabilizers on the Mechanical Properties of Titanium Alloys with α -Structure"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 34-39

Abstract: A study was made of the effect of β -stabilizing additives on the mechanical properties of titanium and its α -alloys with different initial structure and the causes of variation of the properties of titanium alloys on introduction of β -stabilizers. It was discovered that introduction of β -stabilizers in the α -alloy of titanium with an initial fine-grain structure improves the strength and limiting plasticity since the structure is refined and parts of the β -phase with body-centered lattice and a higher content of possible glide planes than the α -phase with a close packed lattice appear. Increasing the β -stabilizers in the alloys with a large-grain coarse-plate structure formed during slow cooling from the β -region lowers the limiting plasticity the greater the β -stabilizer content in

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USSR

MOROZ, L. S., and RAZUVAYEVA, I. N., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 34-39

in the alloy. This takes place as a result of an increase in the degree of inhomogeneity of occurrence of plastic flow in the alloy with large-grain structure with an increase in content of β -stabilizers in the alloy. With an concentration of β -stabilizer close to the critical, an increase in the aluminum content to 6-8% lowers the plastic characteristics sharply (especially the limiting plasticity) independently of the structure of the alloy. This is explained by supersaturation of the Q -phase with aluminum and the occurrence of the Q_2 -phase in individual parts of it.

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USSR

UDC 620.17:669.295'229'71

MOROZ, L. S., and RAZUVAYEVA, I. N.

"Effect of β -Stabilizers on the Mechanical Properties of Titanium Alloys with α -Structure"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov,
No 3, 1971, pp 34-39

Abstract: A study was made of the effect of β -stabilizing additives on the mechanical properties of titanium and its α -alloys with different initial structure and the causes of variation of the properties of titanium alloys on introduction of β -stabilizers. It was discovered that introduction of β -stabilizers in the α -alloy of titanium with an initial fine-grain structure improves the strength and limiting plasticity since the structure is refined and parts of the β -phase with body-centered lattice and a higher content of possible glide planes than the α -phase with a close packed lattice appear. Increasing the β -stabilizers in the alloys with a large-grain coarse-plate structure formed during slow cooling from the β -region lowers the limiting plasticity the greater the β -stabilizer content in

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USSR

MOROZ, L. S., and RAZUVAYEVA, I. N., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 34-39

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- 40 -

USSR

UDC 669.295

M
MOROZ, I. S., and USHKOV, S. S.

"Special Features of the Disintegration of Alpha-Alloys of Titanium at High Temperatures"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 70, pp 1242-1247

Abstract: Data are presented on the anomalous reduction of ductility in a number of titanium alpha-alloys at temperatures above 500°C but below the temperature of polymorphic transformation. It is shown that the cause of embrittlement is the intergrain disintegration which begins at the early stages of deformation and leads to a sharp reduction in the specific ductility of high-alloy alloys. The intergrain disintegration in titanium alpha-alloys actively takes place during static tests and increased rates of deformation and is absent during creep at very low stresses. It is assumed that the viscous slip at the grain boundaries is not always necessary for intergrain disintegration, since the area of disintegration in metals and alloys, as well as in titanium alloys, can appear on the grain boundaries during static tests and at increased deformation rates.

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USSR

MOROZ, O.; NEDZVETSKIY, V.

"A Dream of a Million Watts"

Moscow, Literaturnaya Gazeta, 24 Mar 71, p 11

Abstract: A popular account is presented of the xenon lamp and its potential use in plant breeding and crop growing, especially in the northernmost regions of the Soviet Union, where climatic factors are hostile to agriculture. Experiments have shown, for example, that early wheat varieties ripen 50 to 70 days sooner under xenon lamps than in the field and late varieties mature 70 to 80 days sooner. No special equipment is needed for this purpose. While the technical feasibility of "indoor agriculture" has apparently been demonstrated, the costs of electricity and other economic factors remain a formidable barrier.

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UDC 539.311

USSR

KOTZ, V. M., LIPOVSKIY, D. YE., MOROZ, P. F. (Khar'kov)

"The Stability of Cylindrical Shells in the Case of Uneven Combined Loading"

Kiev, Prikladnaya Mekhanika, Vol 6, No 12, Dec 70, pp 61-67

Abstract: A study is made of the stability of round cylindrical shells under the action of a radial pressure that is uneven along the perimeter, and axial loads, with account taken of initial geometrical imperfections. A comparison is made of the results of experimental and theoretical research. A study is made of the character of the wave formation after loss of stability for various loading variants. 3 figures, 1 table, 6 bibliographic entries.

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" 77 "

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--VINYL ARYL ETHERS -U-
AUTHOR-(04)-LEVCHENKO, A.I., MOROZ, R.A., ZATOLOKIN, E.I., SMINYCH, V.V.
CCUNTRY OF INFO--USSR
SOURCE--GER. OFFEN. 1,802,602
DATE PUBLISHED--21MAY70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL PATENT, ETHER, DIELECTRIC
PROPERTY, POLYMERIZATION, NAPHTHENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1771 STEP NO--GY/0000/70/000/000/0000/0000
CIRC ACCESSION NO--AA0132037
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132037

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VINYL ETHERS OF AROMATIC COMPODS. WERE PREPD. BY REACTION OF AR(R)USBN (WHERE AR EQUALS ARYL; R EQUALS OH, SO SUB3 H, NH SUB2, OR HALOGEN; AND N EQUALS 1-2) WITH CAC SUB2 IN H SUB2 O AND AN ORG. SOLVENT AT 170-220DEGREES AND 20-70 ATM IN THE PRESENCE OF CUCL SUB2 (WHEN R EQUALS HALOGEN) AND KOH OR NaOH. THUS, 5 AMINOACENAPHTHENE 33.8, KOH 11.2, AND CAC SUB2 64 G IN 52 ML H SUB2 O AND 100 ML C SUB6 H SUB6 WAS HEATED TO 195-200DEGREES WITHIN 3 HR AND KEPT 18 HR AT 195-200DEGREES WHILE THE PRESSURE ROSE TO A MAX. OF 43 ATM AND THEN FELL TO 32 ATM. TO GIVE 71.4PERCENT 5 (VINYLOXY)ACENAPHTHENE. OTHER ETHERS PREPD. INCLUDED 5,6 BIS(VINYLOXY)ACENAPHTHENE, 3(VINYLOXY)PHENANTHRENE, AND 2,7 BIS (VINYLOXY)FLUORENE. ON HEATING, THE VINYL ETHERS EASILY FORM HEAT STABLE POLYMERS OF HIGH DIELEC. VALUES. FACILITY: KHARKOV POLYTECHNIC INSTITUTE.

1/2 036
TITLE--HIS CHOICE FOREVER -U-

UNCLASSIFIED

PROCESSING DATE--300C170

AUTHOR--MORUZ, S.

COUNTRY OF INFO--USSR

M

SOURCE--NEDELYA, JULY 27-AUGUST 2, 1970, NR 31, P 4

DATE PUBLISHED---JUL70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, NAVIGATION, AERONAUTICS

TOPIC TAGS--ICEBERG, MARINE NAVIGATION RADAR, AIRBORNE RADAR/(U)AN24
AIRCRAFT, (U)TOROS RADAR SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/0899

STEP NO--UR/9030/70/000/031/0004/0004

CIRC ACCESSION NO--AN0122943

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AN0122943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACCOUNT IS GIVEN OF THE DEMONSTRATION OF THE "TORUS" SYSTEM STAGED FOR THE BENEFIT OF VIKTOR ILLAKIONOVICH ZHARKOV, HEAD OF THE MAIN ADMINISTRATION OF MARINE NAVIGATION, BY MARK IVANOVICH SHEVELEV, CHIEF OF THE POLAR ADMINISTRATION OF CIVIL AVIATION. DURING THE 2ND WORLD WAR SHEVELEV HEADED FOR THREE YEARS THE STAFF OF THE LONG RANGE AVIATION. THE "TORUS" SYSTEM HAS BEEN DEVELOPED BY A TEAM DIRECTED BY V. N. GLUSHKOV AND S. YE. KENTOROV. DURING THE DEMONSTRATION, THE TEAM WAS REPRESENTED BY ENGINEER VALENTIN GEORGIYEVICH YELFIMOV, ONE OF ITS JUNIOR MEMBERS. "TORUS" IS A RADAR SYSTEM FOR ARCTIC ICE RECONNAISSANCE. IT HAS BEEN USED ON AN-24 AS AN AID TO ARCTIC SHIPPING. EVERY FOUR MINUTES THE "TORUS" SWEEPS AN AREA OF HUNDREDS OF SQUARE KILOMETERS FROM HIGH ALTITUDES.

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USSR

MOROZ, S. A.

"Universal "Derevo" [tree] Recognition System"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], 1972, No 243, pp 17-22 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V704 by V. Mikheyev).

Translation: The "Derevo" [tree] (D) recognition system is suggested, produced empirically as a model of the process of recognition of living systems and formally consisting of a directed tree graph (with degree of points $\rho = 2$), the points of which carry various properties ($\pm\alpha, \pm\beta, \dots$), while the leaves correspond to certain patterns. This system allows one assigned pattern, for example sound λ , to reach several leaves, i.e., to characterize more than one pattern in the system. This means that the assigned pattern covers not one, but several isolated areas, allowing the problem of isolation of the objects of one pattern from objects of other patterns to be solved by eliminating the extra limitation -- isolation of the pattern in one space. The quality of the recognition system is determined by the accuracy of division of the space of objects into the isolated spaces of patterns. The mathematical foundation of system D is the following theorem: system D is equivalent to a system of successive division of the space of

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MOROZ, S. A., Tr. Mosk. Aviats. In-ta., 1972, No 243, pp 17-22.

a fixed set of objects into nonintersecting subspaces for objects of assigned patterns. Proof of the theorem is based on a geometric interpretation of the system in the form of multidimensional space Q . Analysis of various structures of space Q , corresponding to various D , by the method of mathematical induction established that: 1) any system D , constructed of any number of properties and having varying structure and number of leaves (where $\rho = 2$) corresponds to a fully defined structure of space Q , the dimensionality of which is equal to the number of properties of the "tree" ($Q^n - D^n$), while the number of isolated subspaces is equal to the number of leaves of the "tree"; 2) each pattern of the system -- leaf of the tree -- corresponds to one isolated subspace q , the dimensionality of which is equal to the dimensionality of space $Q^n \supset q$, while the geometric model is defined as the bundle of half axes Q^n -- of characteristics D^n , included in the characteristics of the pattern and axes Q^n of properties D^n included in system D and not yielding characteristics in the description of the pattern in question; 3) any pair of patterns of system D corresponds to one or more sections of the dividing hyperplane R of system Q^n . Results are presented from the solution of several problems related to the determination of the geometric model of the subspace for the pattern of system

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MOROZ, S. A., Tr. Mosk. Aviats. In-ta., 1972, No 243, pp 17-22.

D^n , fixed by its characteristics and the determination of the section of the dividing surface or two patterns in system D^n , fixed by their characteristics.

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MOROZ, S. A.

"Graphic Method of Representation of a Machine Algorithm for Pattern Recognition"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], No 231, 1971, pp 72-74, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V578 by V. Mikheyev).

Translation: A method is suggested for graphic representation of a machine pattern recognition algorithm, based on the principle of systematization, consisting of successive distribution of patterns by properties of objects to be recognized. At any stage in the recognition process, the device studies not the set of properties of patterns, but rather only two conflicting properties. As a result, the strategy of recognition of any specific object from the set of others can be represented as a "tree," where each unit is assigned its own code, expressed by combinations of the numbers 1 and 0. The code contains the names of junctions in the sequence in which they are found beginning at the root of the tree and, in addition to the address of the junction, reflects the set of properties composing the classification characteristic of the junction. The problem of separation of pattern A from the set of other objects is reduced to determination of the points in n-dimensional space, the coordinates of which are defined by the combination of a large number of properties characteristic of the pattern in question.

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